

What is claimed is:

1. A pneumatic tire composed of a carcass layer crossing between a pair of left and right bead cores, the bead cores comprising:

a fastening bead core for fastening an end of the carcass layer to be turned up around the fastening bead core; and

a non-fastening bead core free from the end of the carcass layer,
wherein an inner circumferential radius R_2 of the non-fastening bead core is set smaller than an inner circumferential radius R_1 of the end of the carcass layer to be turned up around the fastening bead core.

2. The pneumatic tire according to claim 1,

wherein a difference δ between the inner circumferential radius R_1 of the end of the carcass layer to be turned up around the fastening bead core and the inner circumferential radius R_2 of the non-fastening bead core is in the range from 0.5 to 1.5 times of the thickness t of the carcass layer.

3. The pneumatic tire according to any of claims 1 and 2,

wherein the width of the fastening bead core in an axial direction of the tire is in the range from 1 to 3 mm and the width of the fastening bead core in a diametric direction of the tire is in the range from 4 to 12 mm respectively in terms of a cross section of the fastening bead core, and

total tension strength of the fastening bead core is equal to or greater than 5 kN.

4. The pneumatic tire according to any of claims 1 to 3,

wherein insulation rubber for the fastening bead core has JIS-A hardness in the range from 60 to 98 and thickness in the range from 0.1 to 1.5 mm.

5. The pneumatic tire according to any of claims 1 to 4,

wherein the non-fastening bead cores are respectively placed on both sides of the fastening bead core in an axial direction of the tire.

6. The pneumatic tire according to any of claims 1 to 5,

wherein a bead filler is disposed only on a side of the non-fastening bead core out of the fastening bead core and the non-fastening bead core.